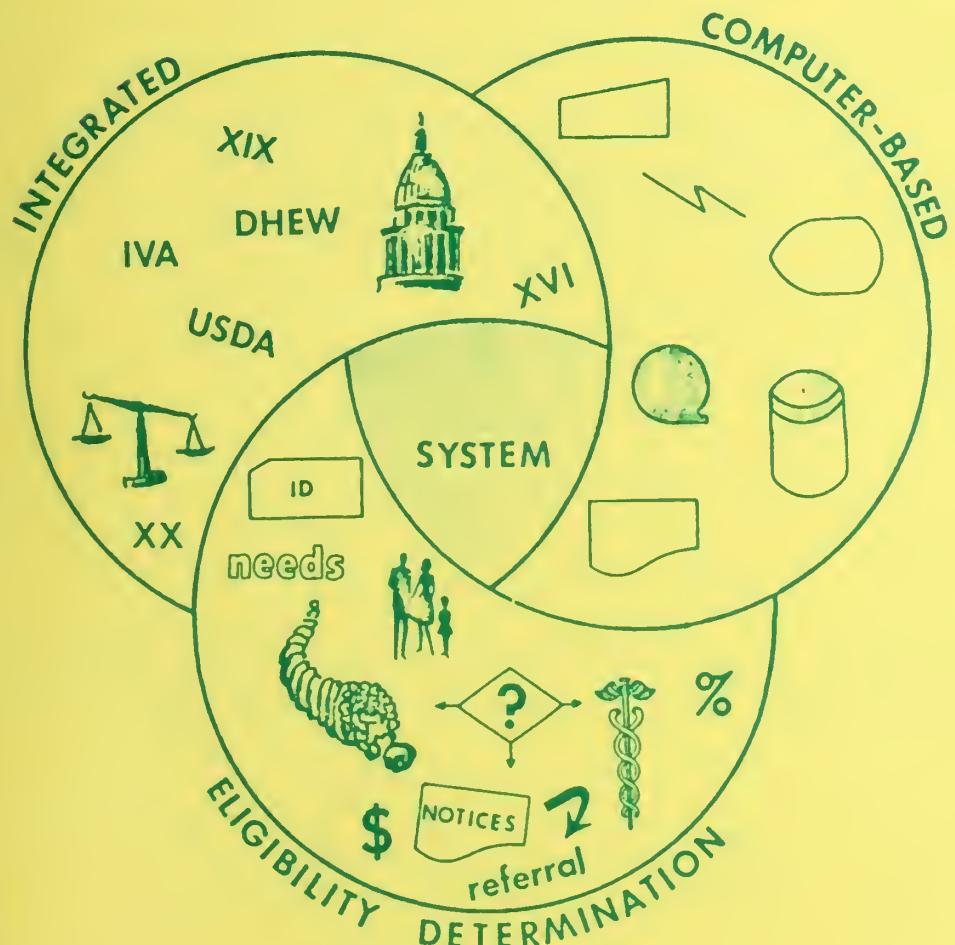


# Feasibility Study of an Integrated Computer-Based System for Eligibility Determination

## VOLUME I: EXECUTIVE SUMMARY

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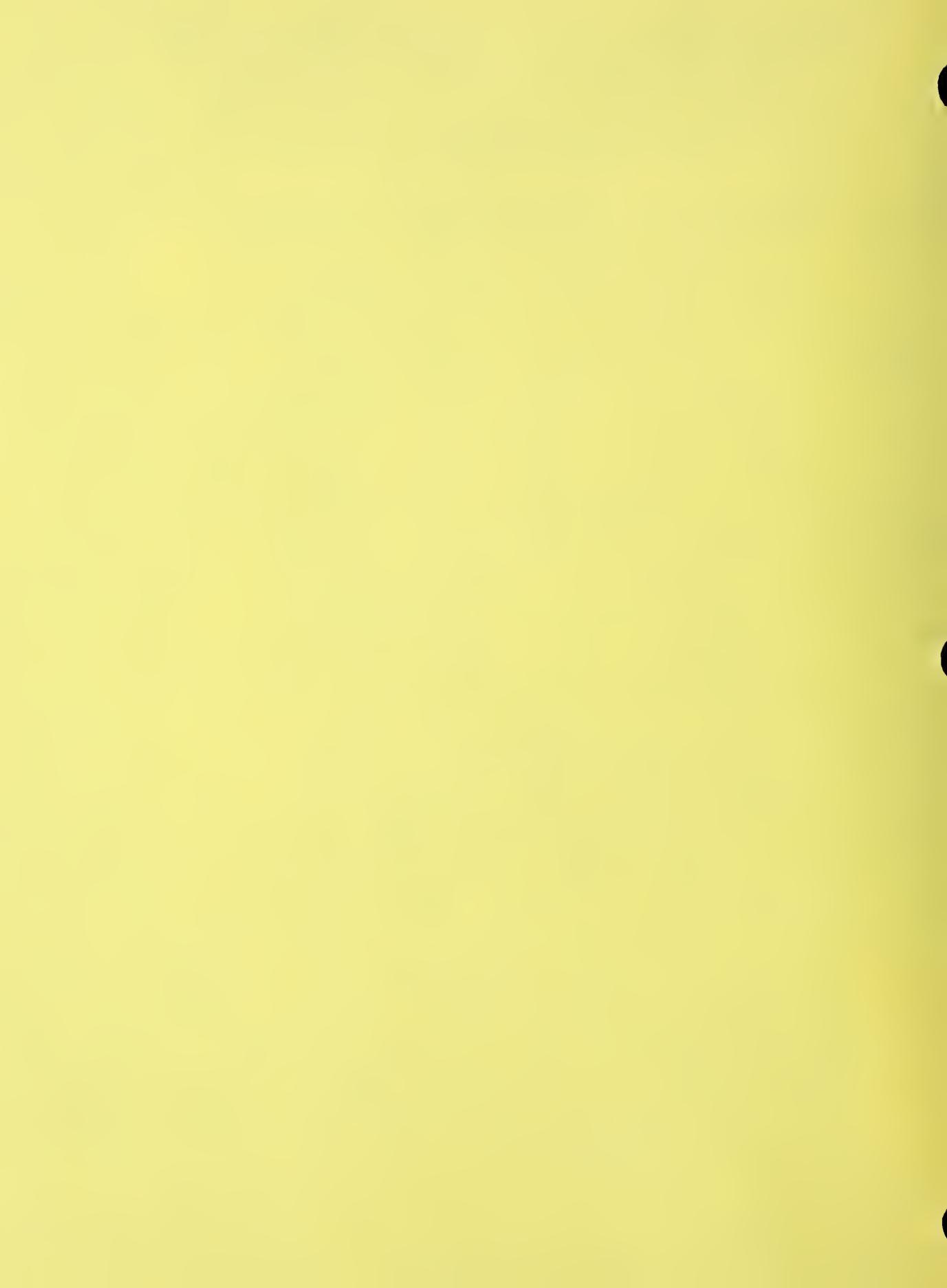
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U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

Health Care Financing Administration

Office of Information Systems,

September 1977



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ATR-77 (7628)-1, Vol. I

FEASIBILITY STUDY OF AN INTEGRATED  
COMPUTER-BASED SYSTEM FOR  
ELIGIBILITY DETERMINATION

Volume I: EXECUTIVE SUMMARY.  
FINAL REPORT

Data Systems Office / Telecommunications Group  
THE AEROSPACE CORPORATION  
Washington, D. C.

September 1977

Prepared for:

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Office of Information Systems, Health Care Financing Administration  
U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

Contract No. SRS-500-76-0522

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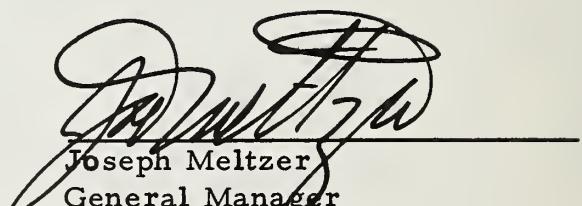
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- C. Henderson, Project Director
- D. Callender
- E. Emerson
- H. Lopez
- F. Pope

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## ABSTRACT

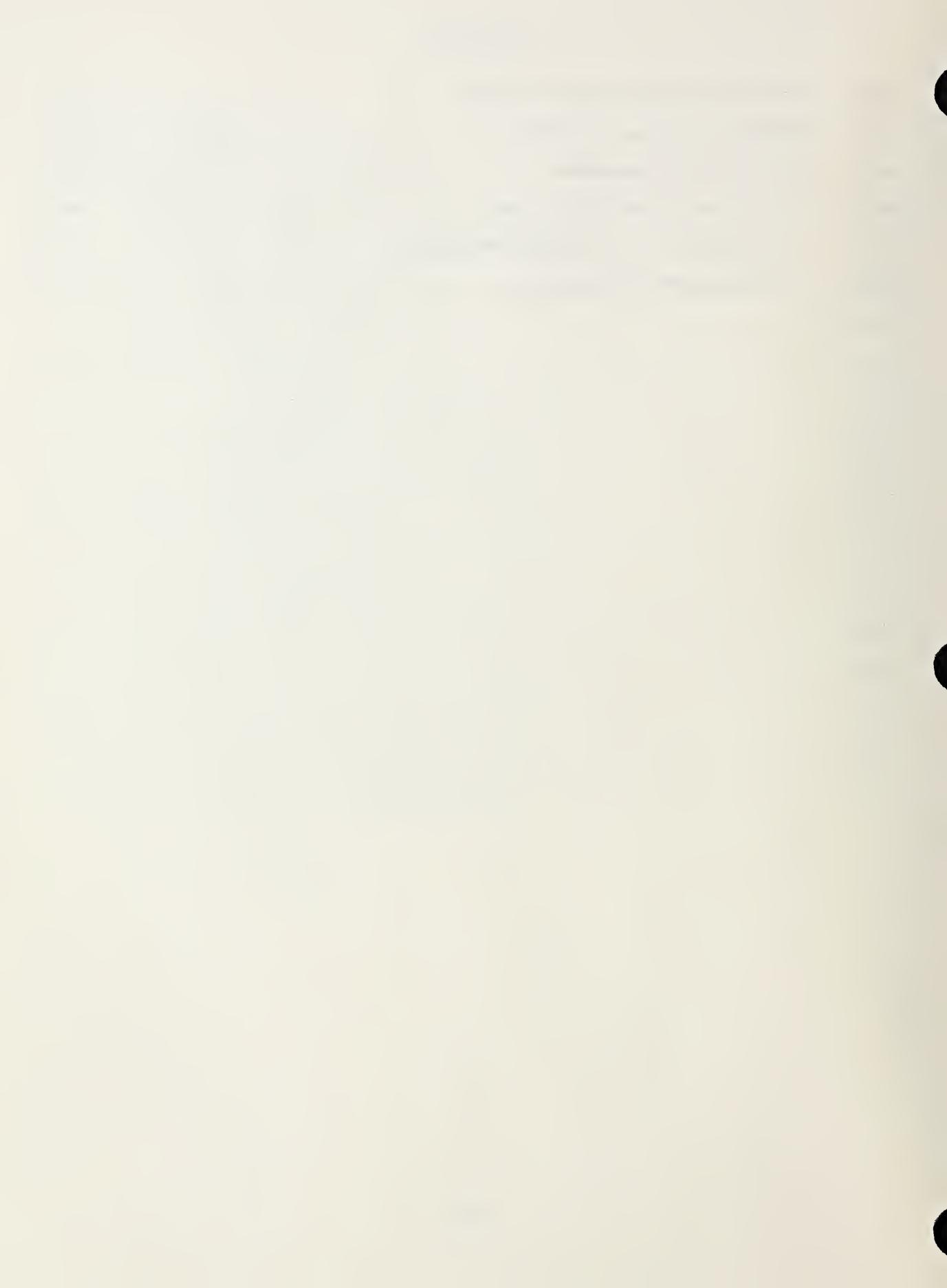
This report is the first volume of a three-volume final report on the Feasibility Study of an Integrated Computer-Based Eligibility Determination System (ICED). This report is an Executive Summary; it describes the findings of the study and presents a set of recommendations based upon the work accomplished on the study. A brief summary is also included on the general systems design of the ICED system. A complete description of the ICED general systems design is contained in Volume II of the final report. The ICED system Data Element Dictionary is contained in Volume III of the final report. The results presented in these three volumes represent the culmination of a 1-year study effort. This study has yielded an extensive data base of eligibility requirements for AFDC, SSI, Medicaid, Social Services, and Food Stamps. It has also produced a general systems design that can be used by any State. Among the advantages of the system are the single point for application and eligibility determination, increased productivity, reduction of redundancy, accessibility of information for management use, complete audit trails, reduced error rates, and greater equity and dignity for recipients.

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## 1. INTRODUCTION

The Medicaid Management Information System (MMIS) provided a precedent for the Federal sponsorship of projects to develop model information systems for use by the several States. The need for these types of systems has been prompted by increased welfare data processing requirements, spiraling health and welfare costs, and frequent changes to welfare program requirements. During the past few years, the States have been experiencing large errors in determining the eligibility of clients for various programs, still larger errors in computing public assistance grants, and extended delays in providing Federal agencies with the necessary reports to monitor the status of the Federally supported welfare programs. Many of these problems are amenable to a technical solution, and one means for accomplishing that end is discussed as the subject of this report.

This document, Volume I of a three-volume final report, summarizes the findings of a 1-year feasibility study of an Integrated Computer-Based Eligibility Determination System (ICED). It includes a brief description of the overall system concept and a set of recommendations for further work in this same general area. Volume II contains the general systems design for the ICED system, while the data element dictionary for the system is contained in Volume III.

### 1.1 STUDY GOALS

The purpose of this study is to determine the feasibility of integrating the eligibility requirements of several social welfare programs into a single automated system that can be used in the certification and monitoring of clients across multiple welfare programs. The Federally supported programs of concern to this project are: Aid to Families with Dependent Children (AFDC), Medicaid (MA), Social Services (SS), Food Stamps (FS), and Supplemental Security Income (SSI). This initial study was established to recommend the direction of further efforts toward achieving a general

systems design with Nationwide applicability. Definitive results from the study are to provide the groundwork for preparing a general systems design in sufficient detail to enable each State to implement its own system--a system that will facilitate the rapid and accurate on-line determination of client eligibility according to category of assistance. The feasibility study was designed to provide a logical assessment of the scope of the eligibility problem, the functions that are to be used in the determination process, and the structure of data bases and subsystems required to effect the eligibility determination process.

The project work effort was organized to meet the following specific objectives:

- To determine the body of relevant legislative and regulatory documents that must be assembled and reviewed to completely describe the conditions for eligibility for the specified categories of assistance,
- To provide a functional description of the requirements for the eligibility determination system,
- To prepare a preliminary general systems design,
- To analyze the modifications of the system design required to accommodate variations in State plans, and
- To provide an estimate of the cost and time required to develop and implement the system design.

The specific objectives listed above were established to permit the scheduling and timely completion of the tasks necessary to realize the final products of the project, namely, the study findings and recommendations and the ICED general systems design. The ICED general systems

design is the first step toward accomplishing a U.S. Department of Health, Education and Welfare (DHEW) long-range goal of providing a general systems design that can be prescribed for use by the States through legislative enactment of appropriate laws, followed by the issuance of regulatory policies regarding the certification of such systems.

The level of detail used to describe the general systems design is consistent with that used in the top-level specification of computer-based systems. This level of system description can be used as the basis for the next step in the long-range goal, which is to provide a detailed systems design and implementation plan for an ICED system that is to be pilot tested in a particular State.

## 1.2 APPROACH

The approach taken on this project has been to work from the top down. That is, to start with the laws governing the five Federally supported programs and then to identify all of the pertinent documents that relate to eligibility requirements. Documents that were reviewed included the Code of Federal Regulations, the Federal Register, and selected policy issuances prepared and disseminated by DHEW and the U.S. Department of Agriculture (USDA). An in-house, proprietary information storage and retrieval system was used to store, organize, and document all of the relevant paragraphs that related to eligibility determination for the specified programs of assistance. That unique system, which was configured especially for this project, made the task of sorting and reviewing eligibility requirements a manageable one. Such a system has been found to offer capabilities for the storage, retrieval, and analysis of regulations that would be useful for future efforts to consolidate regulations within programs and to make them consistent across programs.

The review of laws and regulations pertaining to social welfare in general and eligibility requirements in particular is a difficult task at best. To provide the necessary expertise in public welfare legislative and regulatory requirements in the five program areas, the DHEW Project Officer elected to set up a task force to work closely with The Aerospace Corporation on this project. The purpose of the task force was to provide guidance to the project team and to review the documentation of laws and regulations to ensure that the documentation was complete and correct as of the date that it was prepared. In addition, representatives from three States were included on the task force to ensure that a State point of view was presented on a continuing basis throughout the project. As a result of this arrangement, the eligibility criteria that were extracted from the laws and regulations received a thorough review. The number of extracts was in excess of 500 separate citations.

The next step in the approach involved the definition of system functional requirements and the delineation of the eligibility criteria in precise statements so that the commonality between eligibility requirements across the specified programs could be established. The latter effort was necessary to develop an integrated data base. That data base took the form of a hierarchical logical structure that comprised files which were broken down into groups, subgroups, and finally, data elements. The Client Information File was described in detail in the data base design.

In order to obtain an assessment of the practical problems faced by States and counties carrying out the client certification process, visits to six States were made by project team members. The States that were visited were selected because they each possessed several of the following characteristics:

- Relatively low eligibility error rate,
- Sophisticated data processing capabilities,
- Comprehensive welfare programs,
- Unique system configurations, and
- Automation of eligibility determination.

In particular, States selected for site visits were either operating, in the process of designing, or considering designing integrated computer-based eligibility determination systems. As a part of the site visits, administrators, intake supervisors, eligibility workers, and caseworkers were interviewed by team members and discussions were held with key State and county personnel familiar with the eligibility determination process.

Based on the analysis of the system functional requirements, the review of the eligibility requirements (organized by assistance program and by subject matter), and the compilation of intake procedure data obtained during the State visits, the general systems design was prepared for the ICED system. Five subsystems comprise the system design: Reception, Intake, Evaluation, Support Processing, and Reporting. The names of these subsystems are characteristic of the primary functions performed by each subsystem. The focal point of the eligibility determination system is the integrated data base. The transfer of information between subsystems is accomplished by that data base.

Throughout the system design, the concept of modularity has been stressed. By dividing the system into subsystems, functions, subfunctions, modules, and submodules it has been possible to separate the distinct tasks that must be performed in the eligibility process. Most of the very basic system tasks are described by modules. In an on-line system configuration,

these modules represent the software processes that generate individual displays of information on a computer terminal. Video screen displays on computer terminals, along with associated keyboards, are the means for entering and retrieving on-line data for each client.

Three alternate system configurations were considered for the ICED system design. They range from the most sophisticated approach--an interactive interview system--to the least sophisticated approach--a batch processing system. An intermediate system, referred to as the post-interview system, is considered to be the type of system configuration that would meet the needs of most of the States. Preliminary estimates were made of the cost of implementing each of the three system configurations. These estimates are not intended to be used as the implementation costs for any particular State, rather they are to be used as a guide for future planning. Similarly, the three optional system configurations are discussed as representative systems that can be used as guides for future planning.

Due to the use of display terminals and an integrated data base in the general systems design, a wide range of system configurations can be tailored to meet the needs of a particular State. The input, retrieval, and control of client data from a remote computer terminal has been discussed at length in Volume II of this final report. This mode of operation offers a level of flexibility in case management that is not obtainable in batch input modes of operation. For that reason, the capability of an on-line system to process an application in interruptable stages has been described. Because the system design is downward compatible, a more modest system can be configured by deleting some of the display functions.

## 1.3 SYSTEM BENEFITS

In the following pages of this volume, the system design and feasibility study results are presented and they indicate substantive benefits for the State agency implementing the ICED system. The benefits that are to be derived from implementing the system include direct and indirect cost savings as well as improvements in the efficiency and effectiveness of administering social welfare programs. The following benefits have been identified as a result of the study:

- a) A single office application and eligibility determination point to reduce the time lag between application and eligibility determination, and to enable the agency to establish outreach capabilities.
- b) Increased productivity at the local office level by reducing paperwork, eliminating manual budget and grant calculations, and by freeing workers for additional duties or for concentrating on problem cases and special recipient needs.
- c) Reduced information redundancy in central and/or local office files.
- d) Increased accessibility to data and information for special reports and management reports which are to aid in organizing, administering and managing the agency's operations and planning efforts.
- e) Complete audit trails for case and recipient expenditures, for program benefits utilized, and for employee time and cost allocations.

- f) Virtual elimination of agency produced determination errors, and substantial reduction of client errors through verification checks, direct policy implementation, and client income and status change reporting.
- g) Recipients would receive more equitable treatment; they would receive services and benefits more quickly and in an atmosphere that permits them to maintain their dignity.

## 2. STUDY FINDINGS

In this feasibility study, the project team concentrated on three basic areas. The first area of concern was the nature and content of the laws, regulations, and policy issuances that govern the social welfare programs of interest. The second area of concern included the procedures and practices carried out by individual States as a part of the normal day-to-day processing of client applications and the updating of case files. Finally, the third area was concerned with the system design requirements for automating the eligibility determination process. Each of these areas were studied to determine their impact on the overall effort to develop the ICED system.

### 2.1 LAWS, REGULATIONS, AND POLICIES

The Federal laws, regulations, and policy issuances are and have been the major obstacles that have slowed the implementation of integrated eligibility determination systems by the States. The following problems were found to be in common among many States and were cited by State personnel as being some of the causes for the slow progress in the development of such systems.

- The Federal laws, regulations, and policies are complex, difficult to interpret, and subject to frequent changes.
- Questions concerning the interpretation of Federal regulations that are submitted to the Federal agencies by the States are seldom answered in a timely manner.
- The intent of laws written for one program are different for those written for other programs. For example, Food Stamps requirements are different from those written for AFDC; therefore, there are conflicts in the eligibility requirements for the two programs.

- Changes to regulations are sometimes declared invalid by the courts; the States must after adopting new procedures, then revert to the original regulations.
- Privacy laws are often in direct conflict with a State agency's efforts to obtain financial information about a client.
- The use of the Social Security Number as an identifier is not encouraged or required for any programs except AFDC.
- Definitions of the same word can vary across several social welfare programs.

When considering the legislative and regulatory documents that govern social welfare as a whole, it becomes apparent that they contain the type of information which, in its present form, could not be used as the basis for the design of a complex software system. In order to deal with this problem on this project, it has been necessary to analyze each paragraph or section of the documents individually for primary subject content, to sort the sections according to distinct subject categories such as age or work registration, and then to write concise statements that include specific requirements which are imposed on the client, in so far as eligibility is concerned. The set of "eligibility criteria" that is realized from this approach can then be used to compare the requirements of different programs for purposes of establishing the commonality between requirements. The approach used for gathering and using data on this project was discussed at length in the ICED system Interim Report, August 1977.

The frequent changes to the regulations have been a point of major concern to the States. In many instances, the States have promulgated the Federal laws and regulations through their own legislative system, thereby creating many new State regulations for each Federal regulation. Thus,

the States undergo many more changes in their operational procedures each year than the number of changes in Federal regulations would indicate is required. Because of this one-to-many change situation, some of the States are reluctant to try to automate that portion of their system which is subject to many changes, namely: the intake or eligibility determination process.

## 2.2 STATE PROCEDURES AND PRACTICES

The results of the visits to six States were previously documented in a report entitled "State Visits," July 1977. The interviews with State workers, including administrators, supervisors, and eligibility workers, provided the project team members with a comprehensive set of notes, documents, and reports on the operations in the public welfare departments in those States. The States that were visited included Minnesota, Wisconsin, Oklahoma, Michigan, Washington, and California. Together, these States represent about one-fourth of the total AFDC recipient population in the United States. In addition, the DHEW tasks force that reviewed the project deliverables included personnel from three other States, namely: Texas, Nebraska, and Nevada. The layout of the States from which information was obtained for this project is shown in Figure 2-1.

One of the first observations that could be made following the visits to the different States and the review of available documents was that the manner in which the eligibility determination process is conducted in each State and each county differs. However, the basic functions that are performed, such as reception, application, verification, reporting, etc. are identical. Because of this commonality, there is sufficient reason to believe that an ICED general systems design can be developed that will be applicable across the Nation. The difference in the procedures used by the States for the intake process are a product of individual State needs, creative



May-June 1977

Figure 2-1. Survey of Representative States

administrative management, available resources, and past experience with previous attempts at automating that function. The overriding factor appears to be the economic circumstances in the State--the circumstances that dictate the fiscal policies and procedures that are employed in that State.

The States with State-supervised/county-administered programs tend to have systems and procedures that are highly autonomous at the county level, while the States with State-administered programs tend to have more centralized computer systems and eligibility determination procedures. Each of the States that were visited had something to offer to the ICED project in the way of a system or procedural approach that was characteristic of that given State. For example, Minnesota, which has county-administered social welfare programs, has a Central-Index Master File for identifying clients and for associating those clients with the programs for which they are eligible and from which they are receiving services. With cathode-ray tube (CRT) terminals located in 40 of 87 counties, it is possible to run a file clearance that will identify 82 percent of the State's recipient population.

Wisconsin has a single application form for AFDC, Medicaid, and Food Stamps. It also has an automated eligibility determination system in operation in two counties which presently achieves many of the objectives that have been set for the ICED system project.

Oklahoma has a centralized client information system with over 200 CRT terminals located throughout the State for purposes of file inquiry and case maintenance. Its Model Food Stamp System has been designed to achieve similar objectives to those of the ICED system project.

Michigan has a Consolidated Communication Center that permits telephone calls to come in from all over the State for purposes of updating the

centralized Client Information System. Such a system has been found to be highly effective in handling cases in remote, sparsely populated regions of the State.

Washington has an information system based upon a turnaround document known as an "M" form that consolidates information from several different application forms. It also has a PIC file which permits file clearance searches and scans to be made from local offices across the State that are equipped with CRT terminals.

Finally, California has a consortium of counties that share the cost of designing and maintaining their information systems through a single vendor. Each county in the consortium maintains a system that is tailored to its needs and yet they can all benefit from design improvements that are incorporated in any other county's system.

In talking to the eligibility workers and their supervisors in the six States, they suggested that the following types of problems should be addressed by the ICED system.

- Improved turnaround time.
- Means to check names of persons on multiple programs.
- Distribution of client address changes to other programs.
- Augmentation of the manuals.
- Assistance in the eligibility determination process for multiple programs.
- Need to reduce paperwork.

Solutions to these problems can be expected to improve the efficiency of the intake process as well as to reduce the errors in eligibility determination.

The States that were visited have average eligibility determination error rates for AFDC of less than 3 percent, with Wisconsin and Oklahoma having error rates on the order of 1 percent. This is in sharp contrast to the National average which is about 6 percent and to some individual States who have error rates as high as 12 percent. The error rates due to overpayments are generally much higher than either the ineligible error rates or the underpayment error rates. The National average for overpayment errors is about 14 percent, while for underpayments, the average is about 5 percent.

About one-half of the eligibility determination errors are due to the agency failing to take the required action, while the remaining half is due to clients failing to report changes in their status. A goal of the ICED system is to play a major role in reducing these errors.

### 2.3 SYSTEM DESIGN CONSIDERATIONS

The design of an automated eligibility determination system that encompasses several welfare programs is important for several reasons. First, it will eliminate the need for maintaining duplicate files for the same client who might be eligible for benefits from several different welfare programs. Second, it will prevent the collection and use of inconsistent information concerning a client who applies to different welfare program offices. Third, it will facilitate the updating of client records across all applicable programs and thereby reduce eligibility redetermination errors. Finally, it will improve the efficiency, the effectiveness, and the economics of the eligibility determination process.

The following goals have been set for the ICED system:

- To create a system that is flexible and responsive to user needs;

- To establish and maintain a uniform set of identification characteristics of applicants and eligibles by individual, household, and case for AFDC, SSI, Medical, Social Services, and Food Stamps;
- To provide a modular design that will permit rapid incorporation of changes in eligibility criteria;
- To provide for ease of system use;
- To provide a system design with an integrated data base that can be updated in a timely manner across the different programs;
- To reduce the paperwork that is handled by staff workers;
- To automate time-consuming and error-prone clerical functions;
- To provide a design for a system that handles a high volume of activities in a timely manner;
- To aid in the reduction of error rates; and
- To provide an environment that will enhance the detection of fraud and abuse.

The ICED system has been designed to realize these goals. The ICED system is feasible based on the general systems design, as described in this study. The automated eligibility determination systems that are in operation in Wisconsin and Oklahoma demonstrate the feasibility of the concept using AFDC, Medical, and Food Stamps requirements. Both of those systems can be considered as on-line post-interview systems. The feasibility of the interactive interview system has yet to be demonstrated in actual practice. However, Wisconsin is in the process of conducting a research and development effort using the interactive interview approach.

Based on the analysis performed by Aerospace in Section 10 of Volume II, it is shown that an ICED system can be implemented in a medium-to-large State using approximately 200 to 300 terminals to enter data into the integrated data base from remote local offices for two of the system options and approximately 60 terminals for entering data at the central office for the third system option. For the assumptions discussed in Section 10 of Volume II, the cost of implementing a system for a medium-to-large State would be approximately \$5 million. It would require approximately two years to accomplish the effort. The benefits that could be derived from such an implementation would be extremely large. For example, using the same assumptions mentioned above, a State with 240,000 AFDC recipients can realize a cost reduction after the first year of system operation of approximately \$50 million. Taking into account the cost of implementing the system, a net savings of \$45 million can be achieved. If a similar system was also implemented in all of the States, then an annual savings of over \$2 billion can be realized. The level of savings over an extended period is based on the assumption that the number of recipients remains constant after the first cost reduction.

In addition to the capability to reduce errors, the ICED system has several other advantages listed below. They indicate system characteristics that are needed and that are based upon state-of-the-art capabilities.

- The ICED system will compute eligibility and grant amounts automatically according to objective criteria and will significantly reduce eligibility errors and over payments.
- The productivity of the welfare offices can be increased due to the automation of eligibility determination and due to the clients entering a single office and filling out a single application form.

- Administrative costs are reduced through consolidation of multiple office facilities achieved through integration of multiple program eligibility activity.
- Modular design of the ICED system allows implementation across a wide range of State procedural requirements and permits changes to be easily made that result from new requirements.
- The integrated data base minimizes data element redundancy and facilitates case data changes across multiple welfare programs.
- The ICED system is designed to prompt workers to add missing data and to inhibit eligibility determination until entered data is verified.
- The ICED system will be of benefit to the recipient because of the single application form that is to be filled out, the orderly scheduling of appointments, and the updating of files across all welfare programs with a single status change form.

### 3. RECOMMENDATIONS

The recommendations that are presented below are derived from the study findings that were previously discussed in Section 2. These recommendations are put forth at this time for purposes of aiding future planning in the general areas specified.

#### 3.1 ELIGIBILITY REQUIREMENTS

The problems facing the States are complex due to vague and frequently changing regulations. Laws and regulations are needed that are consistent across welfare programs and worded so that the requirements are easily understood. In the interim, there should be an effort undertaken to index, store, and retrieve current rules and regulations as well as all future rules and regulations pertaining to eligibility requirements.

Staff Recommendations: DHEW, in conjunction with USDA, HUD, and DOL, should sponsor an effort to design a storage and retrieval system that can meet the needs of the agencies involved in the preparation and monitoring of new regulations that will be consistent across programs, updated on a daily basis, and made available to the States.

#### 3.2 STATE REQUIREMENTS

The cost trade-off analysis results included in Section 10 of Volume II indicate that from a cost/benefit standpoint, any of the three system options would be advantageous to use by a State. However, the number of terminals required for an interactive interview system and the turnaround time delay for the batch processing system may make those options nonviable solutions for many States.

Staff Recommendations: DHEW should sponsor an effort to perform a comparative analysis of the three configurations, including time-line

analyses of workflow and system response times for data queries and data updates.

### 3.3 ICED SYSTEM REQUIREMENTS

Before a general systems design can be prescribed for use by all of the States, it should be validated by having it implemented in one or more States. The implementation of the system by a pilot State will permit the system to be tested in an operational environment using Federal and State requirements.

Staff Recommendations: The ICED system development effort should be carried into the next phase which is a detailed design and implementation plan for an integrated computer-based eligibility determination system for a selected State.

#### 4. SUMMARY

The ICED system is designed to operate as the front end of a generalized data processing system that would be required to support a broad spectrum of welfare programs. The ICED system is concerned with the data processing aspects of eligibility determination, grant computations, and case maintenance for Aid to Families with Dependent Children (AFDC), Medical Assistance (MA), Food Stamps (FS), and Social Services (SS). It is only concerned with the Medicaid eligibility aspects of Supplemented Security Income (SSI). The documentation of the ICED system is limited to a system description from a logical point of view that is independent of detailed State-specific regulations, sizing, and hardware parameter selection.

The objective of the final report documentation of the general system design is to describe that design in sufficient detail so that any particular State's detailed design and implementation plan for the ICED system could be based upon the information provided herein. The design concepts and philosophy that have been followed in this effort are described in Volume II of the final report. A top-down structured approach has been employed in the design effort. The basic elements of the design consist of processes, system inputs, system outputs, a data base, users of the system, and implicitly, computer hardware and commercial software.

##### 4.1 TERMINOLOGY

Structural entities have been used in the description of the ICED system for designating processes. A process, in the broadest sense, is a procedure or functional entity that may employ any or all of the other design elements, i.e., inputs, outputs, data bases, personnel, and equipment. The terms used to describe the successive hierarchical divisions of a process are system, subsystem, function, subfunction, module, and submodule. The ICED system is at the highest level of the hierarchy. It is further divided

into five subsystems: Reception, Intake, Evaluation, Support Processing, and Reporting. Each subsystem performs one or more functions, and a function may perform one or more subfunctions. Ultimately, all activities are performed by a module. In this sense, a module is the basic element from which all processes are formed.

Inputs and outputs from the system are described in terms of a collection of data elements. An input is a collection of data received by a process. Input levels of division are termed input collections, input files, input records, input groups, and input data elements. Examples of input records include document contents, card images, and display screen contents referred to as frames. An output is a collection of data delivered by a process. Output levels of division are termed output collection, output files, reports, output groups, and output data elements. Reports may employ various media such as paper, display screens, cards, etc. A collection of data elements is called a group. A group may have one or more subgroups as components. A number of particular instances of a group is called a file and by collecting all of the files known to the system, one forms the data base associated with the ICED system.

A data base is a collection of data used by a process. Data bases are successively divisible into files, records, groups, and data elements. Personnel are collections of individuals which perform tasks as a part of a process. Personnel may be grouped into organizations, suborganizations, and job categories. Equipment are devices or collections of devices functionally employed in a process. Examples are computers, keyboards, storage units, display units, etc. In referring to display devices, the terms "screen" and "frame" are frequently employed. "Screen" indicates the face of the cathode

ray tube (CRT) of a video terminal, whereas "frame" indicates the information and format displayed on the screen.

Since the ICED system, when implemented, will contain not only computer hardware and software, but also the associated operational procedures, manual data processing, and appropriate personnel, the effectiveness of the system is highly dependent upon the organization of the welfare agency using the system. The organization of a welfare department varies from State to State; therefore, it is not practical to present a generalized design for the ICED system that includes an administrative organizational structure. Such detail is an example of the requirements which a particular State must define before the ICED system can be implemented in a specific environment. The important point is that the logical design level cannot appropriately reflect a detailed organizational structure until implementation in a State or county is undertaken.

The logical system design requires that data processing be carried out on a modern, high speed, digital computer. The type and size of hardware required is highly dependent upon the demographic nature and size of the region in which the system is to be implemented. It is also required that parts of the system operate in an interactive mode. Hence, it is necessary to have CRT devices (video terminals) throughout the field offices of the welfare agency. Hard-copy printing devices should also be located in those offices. Whether or not the system uses intelligent terminals, uses a network of computers, or uses one large centrally located computer will be decided when the detailed State-specific design for an ICED system implementation is prepared.

## SYSTEM DESCRIPTION

The five subsystems that comprise the ICED system are briefly described in this section. The Reception subsystem is shown in a condensed form in Figure 4-1. The purpose of this subsystem is to enable the receptionist in a local office to determine if the client is known to the system and then to direct the client to the appropriate location. If the client is new or undergoing a redetermination, then he or she will be given the generalized application form which can be filled out in sequential stages or all at one time. Future activities for each client are scheduled on-line and the status of the present schedule can be displayed.

The Intake subsystem is shown in Figure 4-2. The purpose of this subsystem is to control the entry of data into the computer that are received from a client. The entire process is done via a CRT video terminal in the local office. The eligibility worker or teleprocessing clerk can perform the tasks of case renewal, case maintenance, or referral. In addition, the terminal can be used for entering verification data and the display is used to monitor the status of each case.

The Evaluation subsystem is shown in Figure 4-3. Whereas the entry of data is accomplished by the Intake subsystem, the actual logical computations take place in the Evaluation subsystem. The transfer of data elements between the subsystems is done by means of the integrated data base. In the Evaluation subsystem, nonfinancial as well as financial eligibility is computed along with a grant computation.

The Support Processing subsystem is shown in Figure 4-4. The purpose of this subsystem is to provide the necessary interface with other information systems. Client notifications are also generated by this subsystem.

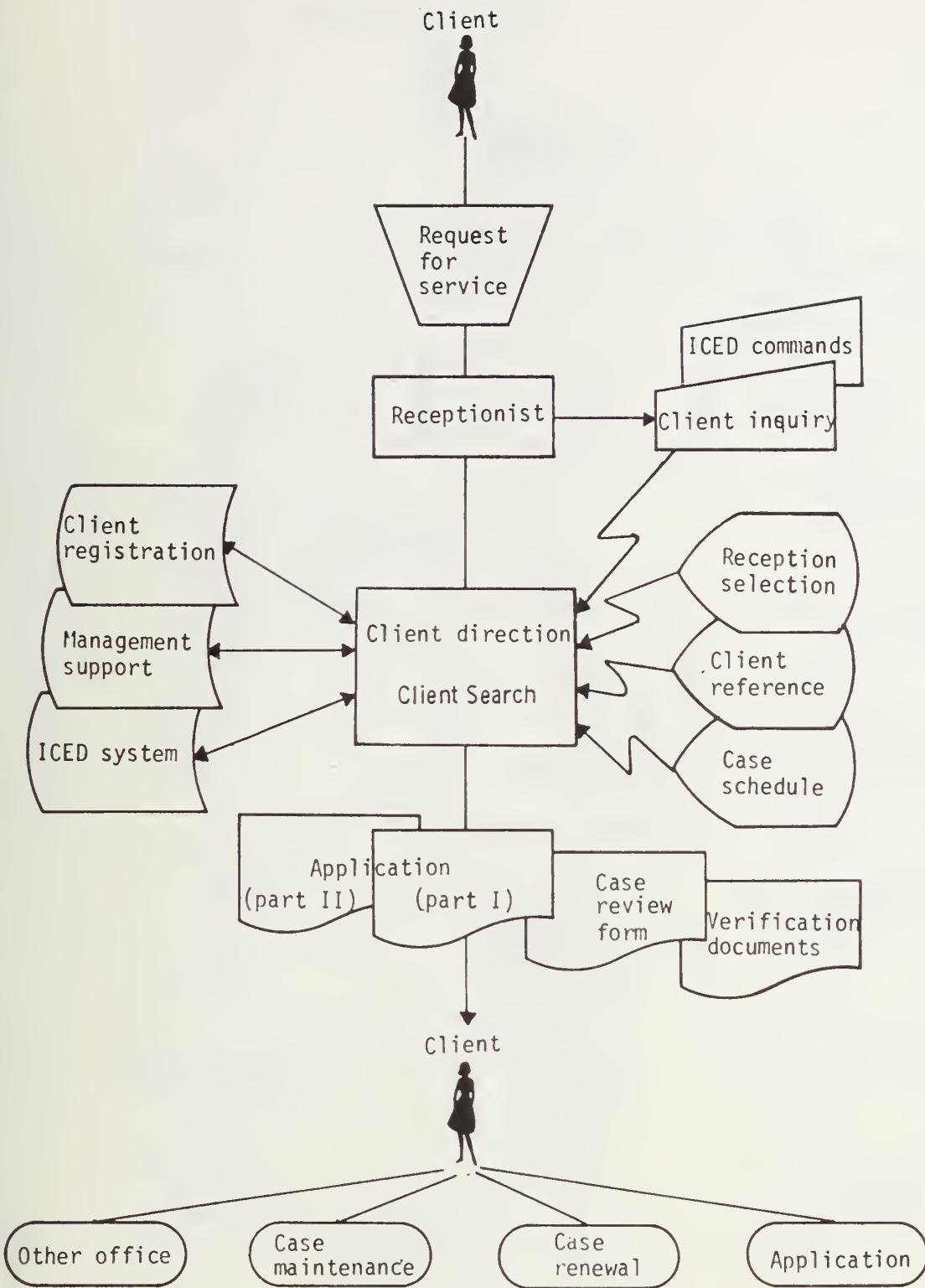


Figure 4-1. ICED Reception Subsystem

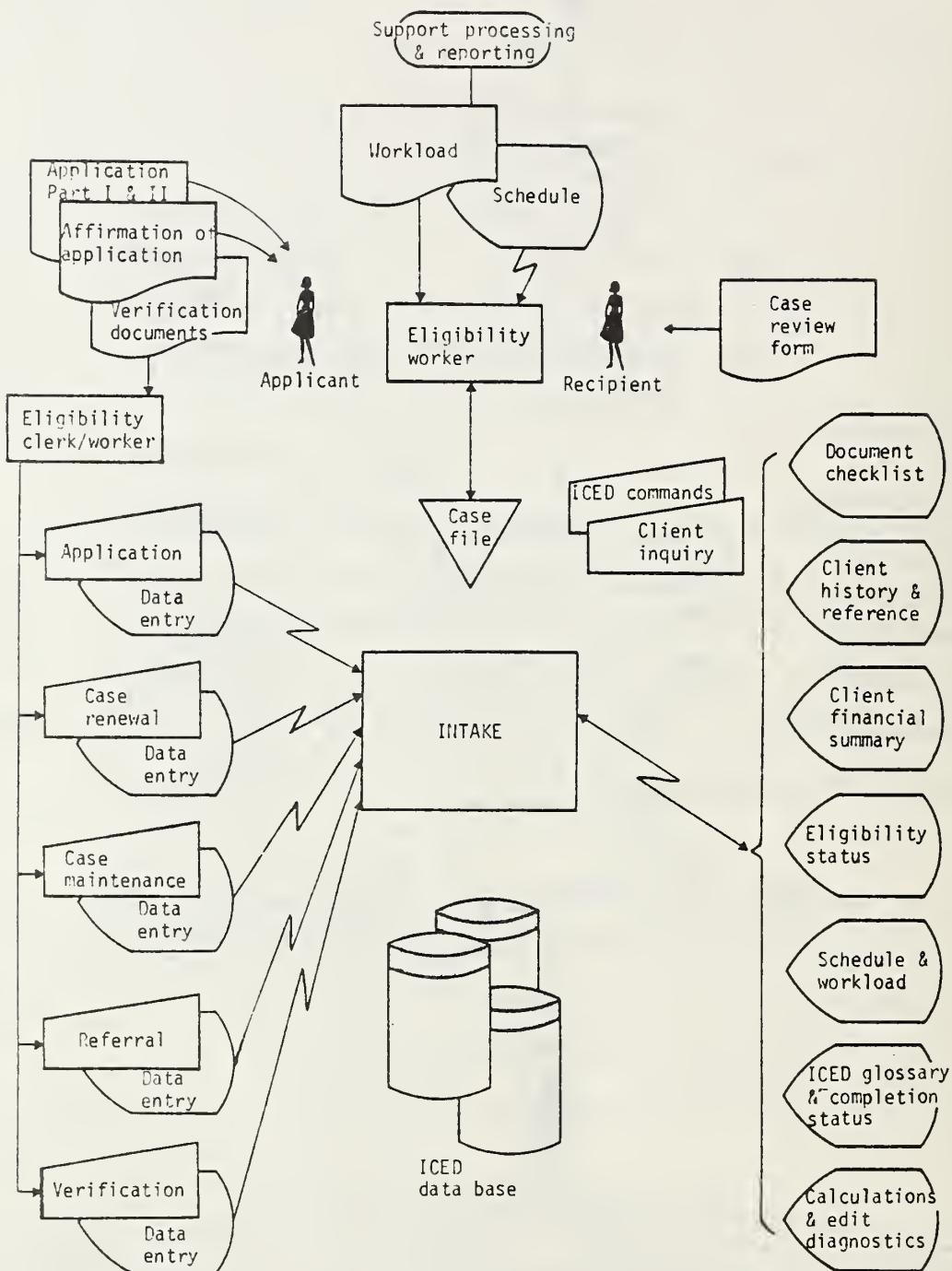


Figure 4-2. ICED Intake Subsystem

## Eligibility caseworker

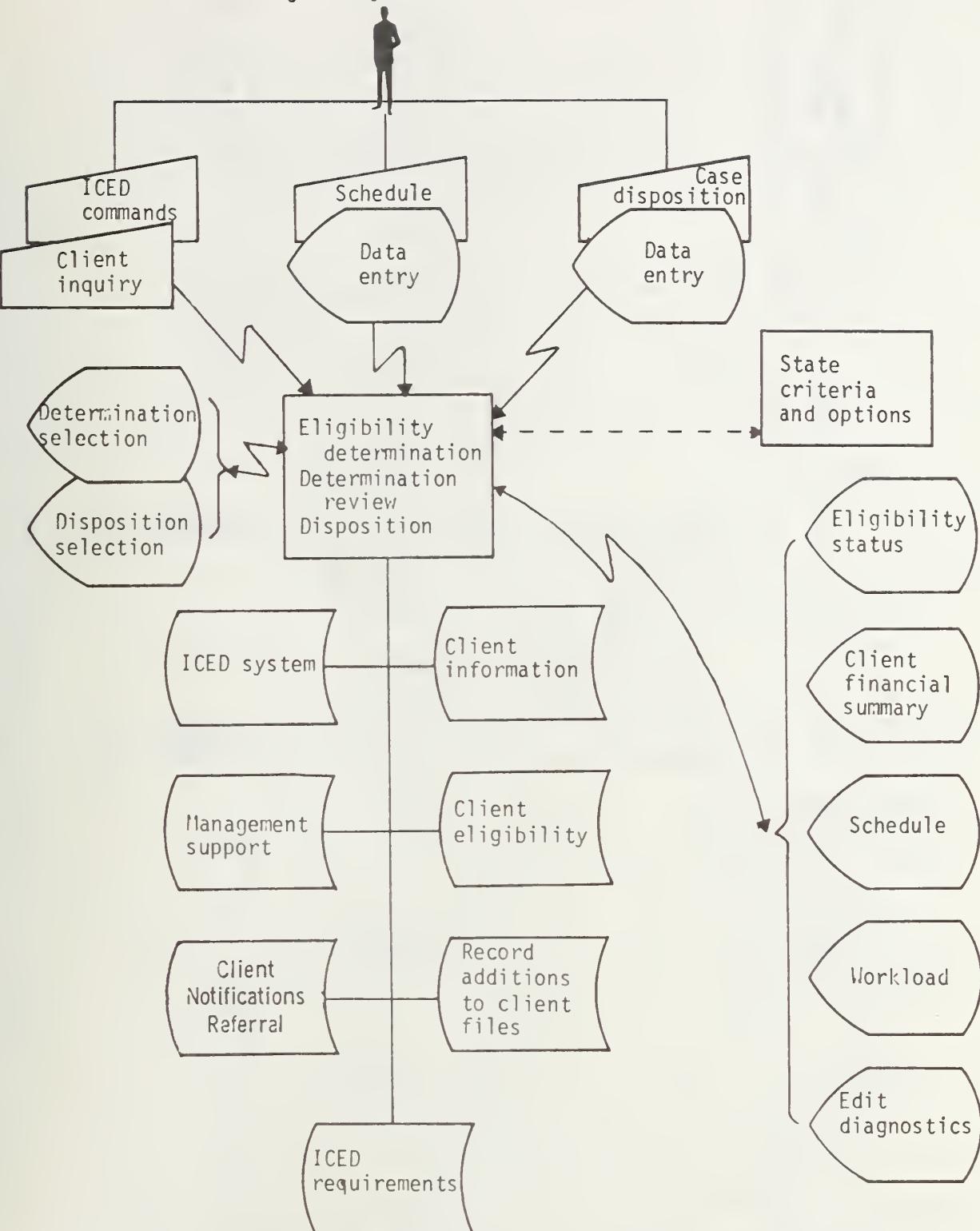


Figure 4-3. ICED Evaluation Subsystem

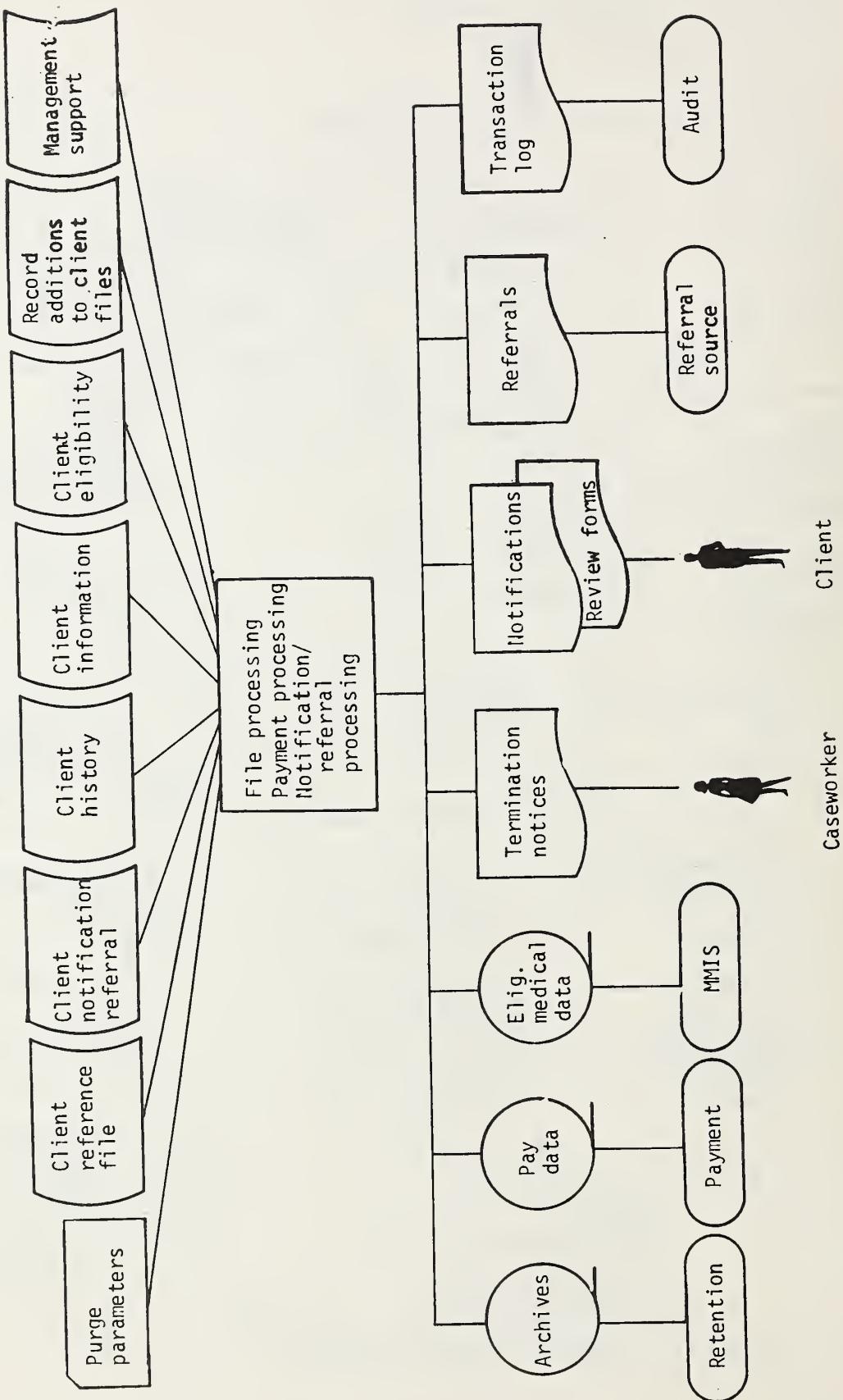


Figure 4-4. ICED Support Processing Subsystem

When it is necessary to refer a client to WIN registrations or to a law enforcement agency, those functions are carried out by this subsystem. This subsystem interfaces with MMIS and payment processing and provides the necessary tapes containing the names of the clients that are eligible for service.

The last subsystem in the system is the Reporting subsystem shown in Figure 4-5. The purpose of this subsystem is to generate all of the necessary Federal, State, county, and local reports. In addition, performance reports are generated for the staff to provide an assessment on the progress of various cases and also the status of those cases.

The integrated data base contains the various files for the system. Seven files have been identified for use on the system. Those files are used in a logical sense to store the functional data associated with each case.

#### 4.3 DOCUMENTATION ORGANIZATION

In addition to this executive summary, the final report documentation is divided into two other volumes. Volume II contains the detailed description of the general systems design. In Volume II, Section 1 contains general information while Section 2 is an overview of the system primarily from a static point of view. Sections 3 through 7 contain detailed descriptions of the system from a dynamic point of view. The terms "static" and "dynamic" refer to how the documentation of the design is to be regarded. Static implies a delineation of the parts or design elements of which the system is comprised. They are laid out in a general chronological sequence within each process. Dynamic refers to how the system is actually used. It involves the use of an ICED command language and does not require a specific sequence within a process, but allows the user to elect processes according to need. Section 8 contains a description of computer-based system dynamics

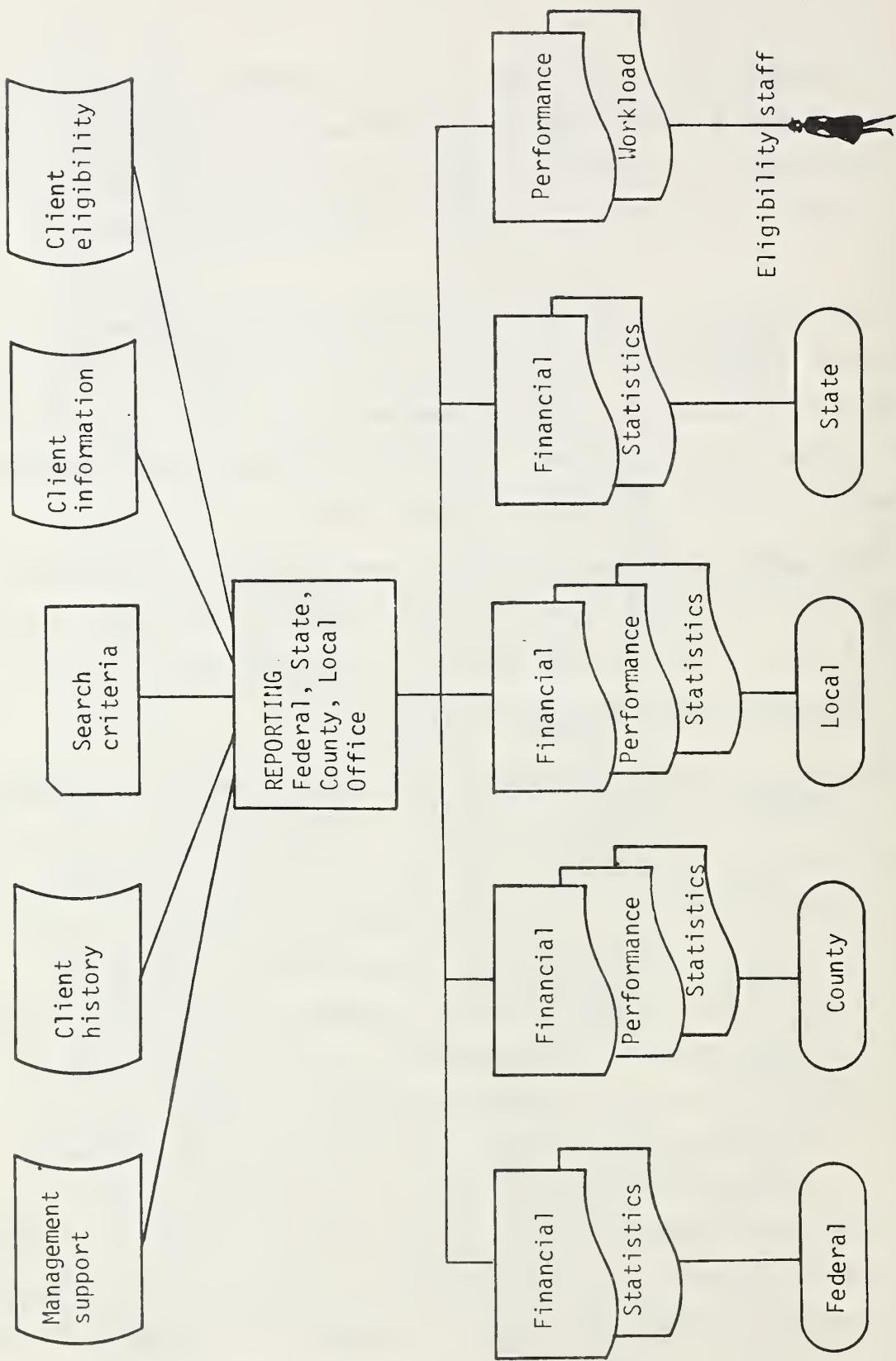


Figure 4-5. ICED Reporting Subsystem

in general. This section is added in order to place the system design in the proper prospective. Section 9 includes a discussion of the modifications to the ICED system that are required to accommodate the variations in State welfare programs and procedures. In Section 10 a brief discussion is presented on the cost trade-offs that are associated with implementing the ICED system. Volume III contains the data element dictionary.





